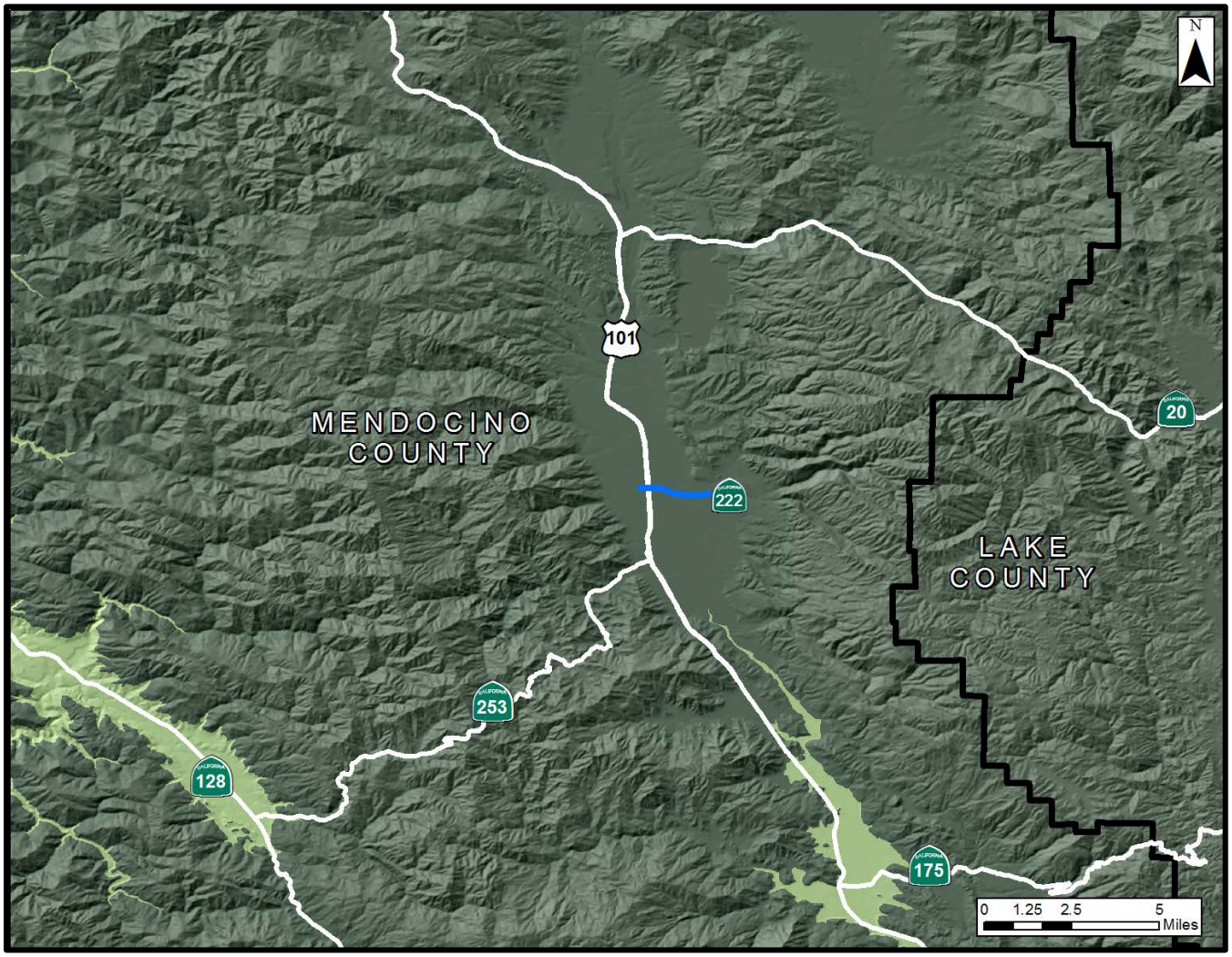
Transportation Concept Report

State Route 222

District 1

June 2017



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California Department of Transportation

Providing a Safe, Sustainable, Integrated and Efficient Transportation System to Enhance California's Economy and Livability

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ABOUT THE TRANSPORTATION CONCEPT REPORT

System Planning is the long-range transportation planning process for the California Department of Transportation (Caltrans). The System Planning process fulfills Caltrans' statutory responsibility as owner/operator of the State Highway System (SHS) (Gov. Code §65086) by evaluating conditions and proposing enhancements to the SHS. Through System Planning, Caltrans focuses on developing an integrated multimodal transportation system that meets Caltrans' goals of safety and health, stewardship and efficiency, sustainability, livability and economy, system performance, and organizational excellence.

The System Planning process for District 1 is primarily composed of three parts: the District System Management Plan (**DSMP**), the DSMP Project List, and the Transportation Concept Report (**TCR**). The District-wide DSMP is a strategic policy and planning document that focuses on maintaining, operating, managing, and developing the transportation system. The DSMP Project List is a list of planned and partially programmed transportation projects used to recommend projects for funding. The TCR is a planning document that identifies the existing and future route conditions as well as future needs for each route on the SHS. These System Planning products are also intended as resources for stakeholders, the public, regional agencies, and local agencies.

TCR Purpose

California's State Highway System needs long range planning documents to guide the logical development of transportation systems as required by CA Gov. Code §65086 and as necessitated by the public, stakeholders, and system users. The purpose of the TCR is to evaluate current and projected conditions along the route and communicate the vision for the development of each route in each Caltrans District during a 20-25 year planning horizon. The TCR is developed with the goals of increasing safety, improving mobility, providing excellent stewardship, and meeting community and environmental needs along the corridor through integrated management of the transportation network, including the highway, transit, pedestrian, bicycle, freight, operational improvements, and travel demand management components of the corridor.

STAKEHOLDER PARTICIPATION

A draft copy of this TCR has been circulated to our transportation partners in Mendocino County including the Mendocino Council of Governments, the County of Mendocino, the City of Ukiah, and Native American Tribes in Mendocino. The draft TCR was circulated to other functional units within the District and Headquarters System Planning for compliance and compatibility with District and Statewide directives and policies. Input was received and revisions made as appropriate.

EXECUTIVE SUMMARY

State Route (SR) 222 is an east west route located entirely within District 1 in Mendocino County. The Route begins near the US 101/SR 222 interchange in the City of Ukiah, and continues east into the community of Talmage. SR 222 is approximately 1.7 miles in length (MEN-222-PM L0.412/L0.50-R0.0/2.153). SR 222 is functionally classified as an Urban Minor Arterial.

CONCEPT SUMMARY

SR 222 has one segment for system planning purposes, which encompasses all of SR 222.

Segment (1-MEN-222)	Segment Description	Existing Facility	20-25 Year Facility Concept	20 Year Operations and Management Concept	Post-25 Year Concept
1 (PM L0.412/L0.50- R0.0/2.153)	US 101/SR 222 interchange to Talmage	2 lane Conventional	2-Lane conventional	Safety Improvements as Identified, Maintenance and Rehabilitation until relinquishment	Relinquishment

PM - Post Mile

CONCEPT RATIONALE

The corridor concept serves as a guide for long range planning of route improvements. It protects the State's investment in SR 222, while recognizing financial and environmental constraints, which will not allow the programming of extensive improvements for all state highways.

PROPOSED PROJECTS AND STRATEGIES

There are no planned capacity increasing projects for SR 222. Maintenance, rehabilitation, and safety projects will be developed as needs are identified. Due to the length and local usage of SR 222, relinquishment of the route to Mendocino County should be pursued.

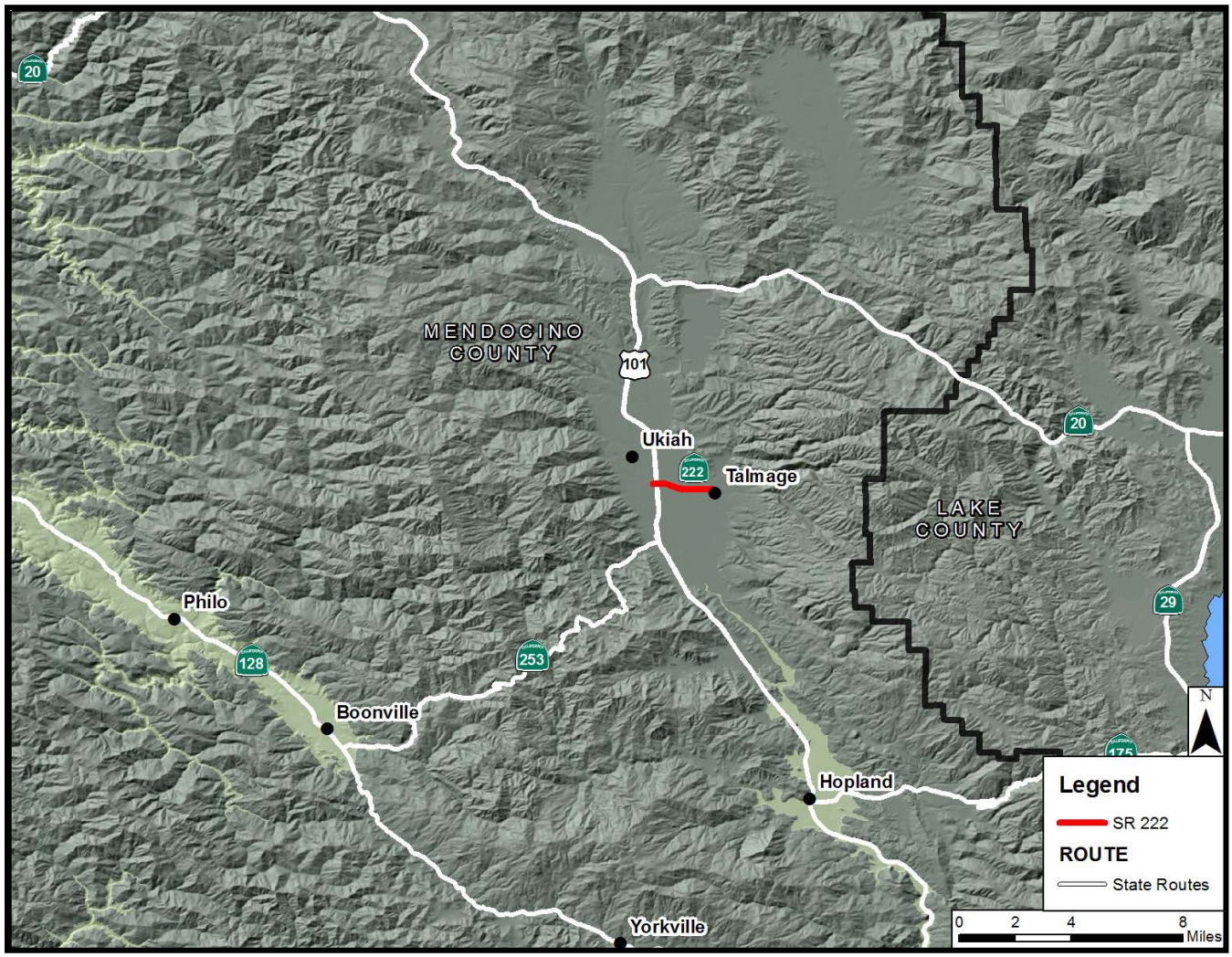
CORRIDOR OVERVIEW

ROUTE SEGMENTATION

SR 222 has one segment for system planning purposes, which encompasses all of SR 222. Segment 1 is 1.74 miles long, beginning near the SR 222/US 101 interchange in the City of Ukiah, and ending in Talmage.

Segment	Location Description	County_Route_Begin PM	County_Route_End PM
1	US 101/SR 222 interchange to Talmage	MEN-222-L0.412	MEN-222-2.153

SR 222Segment Map



ROUTE DESCRIPTION

Route Location:

SR 222 is a "stub" route that originates near the SR 222/US 101 interchange in the City of Ukiah, and proceeds in an easterly direction to its terminus at East Side Road in the community of Talmage. The route is approximately 1.7 miles long (MEN-222-L0.412/L0.53-R0.0/2.153).

SR 222 has undergone relinquishments on the western portion of the route, between North State Street and the US 101 interchange. A segment, from the Northwest Pacific Railroad east to near the US 101 interchange, was relinquished to the County of Mendocino in 1966. This left an "orphan" segment of SR 222 unconnected to a state route after US 101 was realigned from North State Street to the current Ukiah Valley Freeway. This segment, from North State Street east to the Northwest Pacific Railroad, was eventually relinquished in May of 2011 according to right-of-way maps.

Route Purpose:

SR 222 is functionally classified as an Urban Minor Arterial. SR 222 crosses the Russian River to serve the small community of Talmage (population approximately 1,130). This route was brought into the State Highway System to serve the Mendocino State Hospital at Talmage. The State Hospital has closed, and the facility is now a Buddhist temple.

Route Designations and Characteristics:

Segment #	1 (PM L0.412-2.153)
Freeway & Expressway System	No
National Highway System	No
Strategic Highway Network	No
Scenic Highway	No
Interregional Road System	No
Priority Interregional Route	No
Federal Functional Classification	Minor Arterial
Goods Movement Route	No
Truck Designation	California Legal
Rural/Urban/Urbanized	Urbanized
Regional Transportation Planning Agency	MCOG
Local Agency	Mendocino County
Tribes	various
Air District	MCAQMD
Terrain	Flat

KPRA – King Pin to Rear Axle
MCOG – Mendocino Council of Governments
MCAQMD – Mendocino County Air Quality Management District

COMMUNITY CHARACTERISTICS

Incorporated Cities	
Ukiah	16,075
Population Census Designated Places	
Talmage	1,130
Population Mendocino County	
Mendocino County	87,428
Age Distribution Mendocino County	
0-19	24.6%
20-39	23.4%
40-59	28.4%
60+	23.5%
Race by Percentage Mendocino County	
White	62.3%
Hispanic	14.3%
Native American and Alaska Native	4.9%
Asian	1.7%
Black	0.7%
Pacific Islander	0.1%
Two or More Races	4.5%
Other Race	11.5%
Transport Mendocino County	
Drove to work alone	71.8%
Carpooled	12.2%
Worked from home	8.5%
Walked to work	4.9%
Bicycle	1.2%
Public transport	0.7%
Other	0.7%
Commute time (minutes)	18.5
Unemployment	
California	11.0%
Mendocino County	11.6%
Median Household Income	
California	$61,400
Mendocino County	$43,721
Top 3 Employers Mendocino County	
Education services, health care and social assistance	21.4%
Retail trade	14.0%
Arts, entertainment, recreation, accommodation, and food services	10.6%

Table compiled from 2010 Census data

Land Use

SR 222 begins in the City of Ukiah, and proceeds through suburban and rural settlements.

Land Use Table

Segment	Land Use
1 (PM L0.412-2.153)	Suburban Communities, Rural Settlements, Rural Lands

SYSTEM CHARACTERISTICS

SR 222 is a two lane conventional highway with a length of approximately 1.7 miles. Shoulder widths vary between 0-10 feet, but are mostly 4ft. The 20-year and post 20-year concept facility does not have any capacity improvements planned and has the same characteristics as the base year facility. SR 222 is a speed zone throughout the entire route. The Engineering and Traffic Study to support the speed zone was completed in 2014.

Segment #	1 (PM L0.412-2.153)
Existing Facility	
Facility Type	C
General Purpose Lanes	2
Lane Miles	3.48
Centerline Miles	1.74
Median Width	0
Median Characteristics	Undivided
20 Year Concept Facility	
Facility Type	C
General Purpose Lanes	2
Lane Miles	3.48
Centerline Miles	1.74
Post 20 Year facility	
Facility Type	C
General Purpose Lanes	2
Lane Miles	3.48
Centerline Miles	1.74
TMS Elements	
TMS Elements (BY)	
TMS Elements (HY)	Continuous Count Station (PM 0.97)

C - Conventional
TMS – Traffic Management System

NON-MOTORIZED FACILITIES

No alternate facilities exist for bicycles or pedestrians using SR 222. Shoulders vary between 0-10ft, with an average of 3.6ft.

Bicycle Facilities							
Segment	**Post Mile**	**Location Description**	**Bicycle Access Prohibited**	**Facility Type**	**Outside Paved Shoulder Width**	**Posted Speed Limit**	**Alternative Facility**
1	PM L0.412-2.153	US 101 to Talmage	No	Shared	0-10 ft.	30/35/40/45/ 50	None

Pedestrian Facilities								
Segment	**Post mile**	**Location Description**	**Pedestrian Access Prohibited**	**Sidewalk Present**	**Shoulder Width**	**Crossing Distance**	**Facility Description**	**Alternative Facility**
1	PM L0.412-2.153	US 101 to Talmage	No	WB PM L0.412-R0.04	0-12 ft.	27-63ft.	Conventional Highway with little sidewalk	None

TRANSIT FACILITY

No Transit operates on SR 222.

FREIGHT

SR 222 is identified as a “California Legal” truck route. Freight generation is generally Ukiah and US 101 to the west, and agricultural to the east.

Facility Type/Freight Generator	Location	Mode	Major Commodity/Industry
US 101/Ukiah	Segment 1	Truck	General Goods
SR 222	Segment 1	Truck	Agricultural goods/ Grapes

ENVIRONMENTAL CONSIDERATIONS

Aerially deposited lead is a potential concern, due to the historic use of SR 222. Endangered, Threatened and Rare Species: The California Natural Diversity Database lists one species within one half mile of SR 222, presented below.

Species	Federal Status	California Status	Department of Fish and Wildlife Status	Rare Plan Rank
Baker's Meadowfoam	None	Rare	None	1B.1

1B.1 - Rare in California and elsewhere; Rare, threatened, or endangered; Seriously threatened in California

Senate Bill 857 was enacted into law effective January 1, 2006 concerning fish passages. This bill requires Caltrans projects be constructed so that they do not present a barrier to anadromous fish[1] passage at any life stage. Additionally, all projects on streams that currently or historically supported fish and affect culverts, bridges, or associated structures shall include a fish passage assessment according to National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) guidelines prior to commencing project design. Caltrans is also required to develop necessary passage corrections during project development in consultation with the CDFW.

Man-made barriers to anadromous fish migration include road and stream crossings, irrigation diversions, dams, and many other in-stream structures. Passage impediments affect adult and juvenile fish by delaying or preventing upstream and downstream migration, preventing the use of available habitat, and possibly inflicting injury or death. There are no fish passage barriers identified on SR 222.

[1] An anadromous fish is a fish which spawns in freshwater, migrates to the ocean to grow up then returns to freshwater to spawn and complete its lifecycle. In California, anadromous fish include: Salmon (Chinook and Coho salmon), Steelhead (sea going rainbow trout), Sturgeon (white and green), Striped Bass (non-native), American Shad (non-native), Stickleback (three-spined), and Pacific Lamprey

CORRIDOR PERFORMANCE

Traffic volumes on SR 222 are generally moderate. There is only one passing opportunity for eastbound traffic. As the route is a minor arterial, no concept LOS is given.

Segment #	1 (PM L0.412-2.153)
Basic System Operations	
Annual Average Daily Traffic (AADT) Base Year	6,150
AADT Horizon Year[1]	6,450
LOS Method[2]	HCM 2010
LOS (BY)	C
LOS (HY)	C
Daily Vehicle Miles Traveled (DVMT) BY	16,300
DVMT (HY)	17,100
Truck Traffic	
Total Average Annual Daily Truck Traffic (AADTT) (BY)	215
Total Trucks (% of AADT) (BY)	3.5%
5+ Axle Average Annual Daily Truck Traffic (AADTT)(BY)	37
5+ Axle Trucks (as % of AADT)(BY)	0.6%
Peak Hour Traffic Data	
Peak Hour Direction	N
Peak Hour Directional Split (BY)	60%
Peak Hour Volume (BY)	725
Peak Hour Volume (HY)	760
Peak Hour Vehicle Miles Traveled (BY)	1900
Peak Hour VMT (HY)	1990

1. Caltrans District 1 2014 growth factors were used for traffic volume projections
2. LOS analysis obtained using HCS 2010 software

ADDITIONAL TOPICS

SR 222 was established as a state route to serve as a connection from the historic US 101 (now State Street) with the Mendocino State Hospital. A freeway bypass of the City of Ukiah was constructed in 1965, and historic US 101 was relinquished to the County of Mendocino and City of Ukiah. Additionally, the Mendocino State Hospital closed in 1974, and the campus is now occupied by the City of Ten Thousand Buddhas temple. Because of this, SR 222 no longer serves a statewide or even regional purpose. Portions of SR 222 west of US 101 have been relinquished to the City of Ukiah (PML0.0/L0.4121). Relinquishing SR 222 will work to achieve Goal 2 of the Strategic Management Plan, Stewardship and Efficiency.

CORRIDOR CONCEPT

The corridor concept for SR 222 consists of a facility concept that identifies the ultimate facility concept for 20-years and beyond.

CONCEPT RATIONALE

The corridor concept serves as a guide for long range planning of route improvements. It functions to protect the State's investment in SR 222, while recognizing financial and environmental constraints, which will not allow the programming of extensive improvements for all state highways.

FACILITY CONCEPT

SR 222 will remain a 2-lane conventional highway, maintained and rehabilitated as necessary on its existing alignment during the 20-25 year planning horizon. Safety and operational improvements at spot locations will be considered as necessary. Relinquishment to the City of Ukiah and County of Mendocino should be considered.

PLANNED AND PROGRAMMED PROJECTS AND STRATEGIES

There are no programmed projects on SR 222. Relinquishment should be discussed with the City of Ukiah and County of Mendocino.

Strategies Developed to Achieve and Maintain the Corridor Concept

- Safety: Safety is the highest priority of Caltrans and our regional partners. Necessary safety improvements will be made as needs are identified.

- Maintenance and Rehabilitation: Maintain and rehabilitate as necessary. Consideration should be given to widening in conjunction with pavement rehabilitation projects where necessary to provide adequate paved shoulder width for both motorized and non-motorized traffic. Bridge rehabilitation or replacement, storm damage and operational improvement projects will also be considered as necessary.

- Community Planning Strategy: The District will cooperate with local transportation and land use planning agencies on SR 222 to assure that the highway will be a community asset as well as provide for the safe movement of motorized and non-motorized traffic.

- Cooperation with Transportation Partners: The District appreciates the cooperation of its transportation partners in the development of this Transportation Concept Report, and looks forward to continuing cooperation to achieve the selected concept.

APPENDIX

APPENDIX A: GLOSSARY OF TERMS AND ACRONYMS

Acronyms

AADT – Annual Average Daily Traffic
AADTT – Annual Average Daily Truck Traffic
BY – Base Year
CDFW – California Department of Fish and Wildlife
DVMT – Daily Vehicle Miles Traveled
HCM – Highway Capacity Manual
HCS – Highway Capacity Software
HY – Horizon Year
KPRA – King Pin to Rear Axle
MCAQMD – Mendocino County Air Quality Management District
MCOG – Mendocino Council of Governments
NOA – Naturally Occurring Asbestos
PAD – Passage Assessment Database
PM – Post Mile
SHOPP – State Highway Operation and Protection Program
SHS – State Highway Systems
SR – State Route
TCR – Transportation Concept Report
VMT – Vehicle Miles Traveled

APPENDIX B: DEFINITIONS

AADT – Annual Average Daily Traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Traffic counting is generally performed by electronic counting instruments moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. Annual ADT is necessary for presenting a Statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways and other purposes.

Base year – The year that the most current data is available to the Districts

Bikeway Class I (Bike Path) – Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross flow by motorists minimized.

Bikeway Class II (Bike Lane) – Provides a striped lane for one-way bike travel on a street or highway.

Bikeway Class III (Bike Route) – Provides for shared use with pedestrian or motor vehicle traffic.

Capacity – The maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.

Capital Facility Concept – The 20-25 year vision of future development on the route to the capital facility. The capital facility can include capacity increasing, State Highway, bicycle facility, pedestrian facility, transit facility (Intercity Passenger Rail, Mass Transit Guideway etc.), grade separation, and new managed lanes.

Concept LOS – The minimum acceptable LOS over the next 20-25 years

Conceptual – A conceptual improvement or action is a project that is needed to maintain mobility or serve multimodal users, but is not currently included in a financially constrained plan and is not currently programmed.

Corridor – A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, bicycle, pedestrian, and transit route alignments. Off system facilities are included as informational purposes and not analyzed in the TCR.

Facility Type – The facility type describes the state highway facility type. The facility could be freeway, expressway, conventional, or one-way city street.

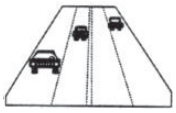
Freight Generator – Any facility, business, manufacturing plant, distribution center, industrial development, or other location (convergence of commodity and transportation system) that produces significant commodity flow, measured in tonnage, weight, carload, or truck volume.

Headway – The time between two successive vehicles as they pass a point on the roadway, measured from the same common feature of both vehicles.

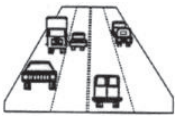
Horizon Year – The year that the future (20 years) data is based on.

ITS – Intelligent Transportation System improves transportation safety and mobility and enhances productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. Intelligent transportation systems encompass a broad range of wireless and wire line communications-based information and electronics technologies to collect information, process it, and take appropriate actions.

LOS – Level of Service is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of speed, travel time, freedom to maneuver, traffic interruption, comfort, and convenience. Six levels of LOS can generally be categorized as follows:



LOS A describes free flowing conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway.



LOS B is also indicative of free-flow conditions. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.

LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver with the traffic stream is now clearly affected by the presence of other vehicles.

D demonstrates a range in which the ability to maneuver is severely restricted because of the traffic congestion. Travel speed begins to be reduced as traffic volume increases.

LOS E reflects operations at or near capacity and is quite unstable. Because the limits of the level of service are approached, service disruptions cannot be damped or readily dissipated.

LOS F a stop and go, low speed conditions with little or poor maneuverability. Speed and traffic flow may drop to zero and considerable delays occur. For intersections, LOS F describes operations with delay in excess of 60 seconds per vehicle. This level, considered by most drivers unacceptable often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection.

Multi-modal – The availability of transportation options using different modes within a system or corridor, such as automobile, subway, bus, rail, or air.

System Operations and Management Concept – Describe the system operations and management elements that may be needed within 20-25 years. This can include Non-capacity increasing operational improvements (Aux. lanes, channelization's, turnouts, etc.), conversion of existing managed lanes to another managed lane type or

characteristic (e.g. HOV land to HOT lane), TMS Field Elements, Transportation Demand Management, and Incident Management.

Peak Hour – The hour of the day in which the maximum volume occurs across a point on the highway.

Peak Hour Volume – The hourly volume during the highest hour traffic volume of the day traversing a point on a highway segment. It is generally between 6 percent and 10 percent of the ADT. The lower values are generally found on roadways with low volumes.

Peak Period – is a part of the day during which traffic congestion on the road is at its highest. Normally, this happens twice a day, once in the morning and once in the evening; the time periods when the most people commute. Peak Period is defined for individual routes, not a District or Statewide standard.

Planned– A planned improvement or action is a project in a long-term financially constrained plan, such as an approved Regional Transportation Plan (RTP or MTP) or Capital Improvement Plan.

Post Mile – A post mile is an identified point on the State Highway System. The milepost values increase from the beginning of a route within a county to the next county line. The milepost values start over again at each county line. Milepost values usually increase from south to north or west to east depending upon the general direction the route follows within the State. The milepost at a given location will remain the same year after year. When a section of road is realigned, new milepost (usually noted by an alphabetical prefix such as "R" or "M") are established for it. If relocation results in a change in length, "milepost equations" are introduced at the end of each relocated portion so that mileposts on the reminder of the route within the county will remain unchanged.

Programmed – A programmed improvement or action is a project in a near-term programming document identifying funding amounts by year, such as the State Transportation Improvement Program or the State Highway Operations and Protection Program

Route Designation –A route's designation is adopted through legislation and identifies what system the route is associated with on the State Highway System. A designation denotes what design standards should apply during project development and design. Typical designations include but not limited to National Highway System (NHS), Interregional Route System (IRRS), Scenic Highway System,

Rural – Fewer than 5,000 in population designates a rural area. Limits are based upon population density.

APPENDIX C: RESOURCES

WORKS REFERENCED

1. 2012 Transportation Concept Report Guidelines
2. January 2002 SR 222 Route Concept Report, Caltrans District 1
3. 2002 California State Highway Log, District 1
4. CRS Maps (functional classification) (http://www.dot.ca.gov/hq/tsip/hseb/crs_maps/)
5. 2014 Traffic Volumes on California State Highways (http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm)
6. Interregional Road System (http://www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=00001-01000&file=250-257
7. Freeway and Expressway System (http://www.leginfo.ca.gov/cgi-bin/displaycode?section=shc&group=00001-01000&file=250-257)
8. State Scenic Highways (http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm)
9. Truck Network Map (http://www.dot.ca.gov/hq/traffops/trucks/truckmap/truck-route-list.xlsx)
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11. 2010 U.S. Census Bureau (quickfacts.census.gov/qfd/states/06/06045.html)
12. Mendocino Transit Agency (http://mendocinotransit.org/)
13. 2014 Truck Traffic on the California State Highway System (http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm)
14. CA Natural Diversity Database (http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp)
15. Level of Service Methodology, Highway Capacity Manual, Transportation Research Board, 2010
16. State Highway Growth Factors, Caltrans District 1, Feb. 2014.
17. National Highway System (http://www.dot.ca.gov/hq/tsip/hseb/highway_systems/NHS_statehighways.pdf)
18. 2016 State Transportation Improvement Program
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S:Tran Plan/SP/SP products/TCR/Route 222/TCR SR 222 Draft June 2017.docx